HEALTH AND SAFETY PLAN FORM *This document is for the exclusive use*
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PROJECT NAME	Silver Bow Creek/Butte Area NPL Site West Side Soils Operable Unit	**PROJECT#** 79171.3383.363	**OFFICE** Helena, Montana
SITE ADDRESS	CDM Smith Field Office - 209 S. Montana St Butte , MT 59701	**CLIENT ORGANIZATION**	EPA Region 8
		CLIENT CONTACT	Nikia Greene
		CLIENT CONTACT PHONE #	406-457-5019

(X) AMENDMENT TO EXISTING APPROVED H&SP?
(X) H&SP AMENDMENT NUMBER? 1 (X) DATE OF PREVIOUS H&SP APPROVAL 3/15/19

OBJECTIVES OF FIELD WORK:
(e.g. collect surface soil samples):

This Site Health and Safety Plan (SHSP) has been prepared by CDM Federal Programs Corporation (CDM Smith) for its employees conducting remedial investigation (RI) sampling activities at the West Side Soils Operable Unit (WSSOU) of the Silver Bow Creek/Butte Area Superfund Site. Activities associated with this HASP generlly consist of surface water, pore water, surface solid media, subsurface solid media, sediment, stormwater, and dust sampling activities.

SITE TYPE: *Check as many as applicable*

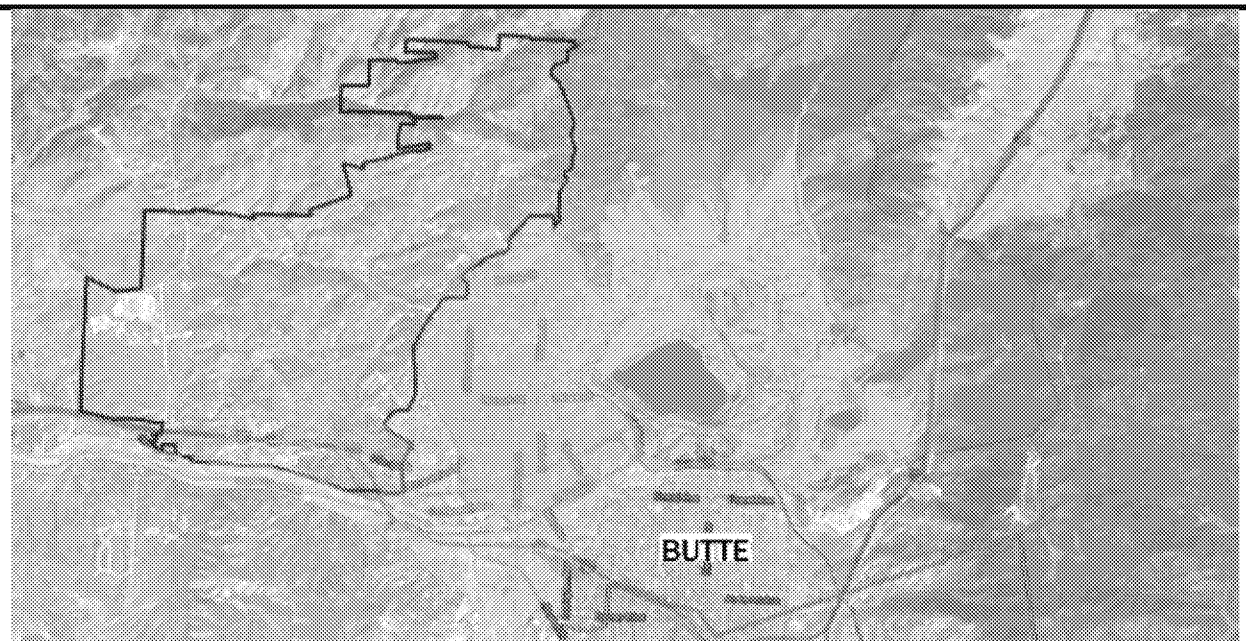
Active	**(X)**	Landfill	( )	**Remote**	**(X)**
Inactive	( )	Uncontrolled	**(X)**	Military	( )
Secure	( )	Industrial	( )	Water Treatment	( )
Unsecure	**(X)**	Construction	( )		
Enclosed space	( )	Mining	( )		

All requirements described in the CDM Smith Health and Safety Manual are incorporated in this health and safety plan by reference.

	PERSONNEL AND RESPONSIBILITIES NAMES OF WORK CREW MEMBERS	Company / Division / Office	Current Training & Medical?	Project or Site Responsibilities	Tasks On Site?
	Chapin Storrar	CDM Smith	No	Project Manager	1-2
	Greg Hayes	CDM Smith	Yes	Co-PM/Field Team Member	1-2
	Nick Anton	CDM Smith	Yes	Field Team Director	1-2
	Dominic Pisciotta	CDM Smith	Yes	Health and Safety Coordinator	1-2
	Connor Kelley	CDM Smith	Yes	Field Team Leader	1-2
	Michelle Goldberg	CDM Smith	Yes	Field Team Leader	1-2
	Angela Frandsen	CDM Smith	Yes	Env. Engineer	1-2
	Winston Parker	CDM Smith	Yes	Field Team Member	1-2
	Adam Neisess	CDM Smith	Yes	Field Team Member	1-2
	Nancy Podolinsky	CDM Smith	Yes	Sample Coordinator	1-2

BACKGROUND REVIEW: (X) Complete ( ) Incomplete

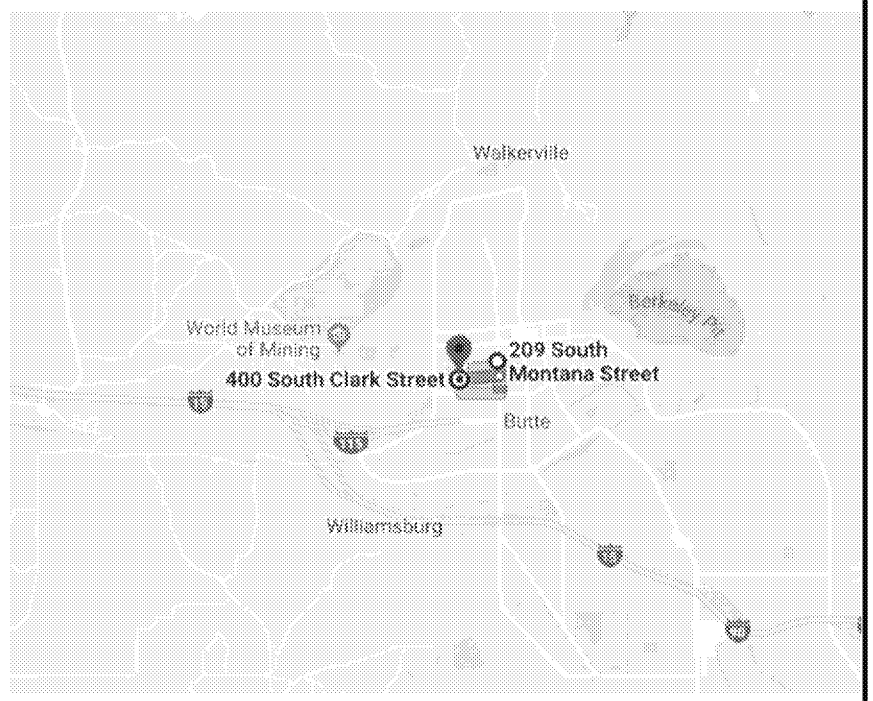
SITE MAP: MAP of WSSOU - Mine Study Area Boundary and Blacktail and Basin Creek Study Area



Mine Study Area Boundary

Blacktail and Basin Creek Study Area

SITE MAP: ROUTE 2 TO HOSPITAL: WSSOU Field Office (209 S. Montana St, Butte, MT 59701) TO ST. James Healthcare



209 S Montana St
Butte, MT 59701

Head south on Montana St toward W Silver St
0.1 mi

Turn right onto W Porphyry St
0.3 mi

Continue straight
Destination will be on the right
121 ft

400 S Clark St
Butte, MT 59701

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HISTORY: *Summarize conditions that relate to hazard. Include citizen complaints, spills, previous investigations or agency actions, known injuries, etc.*

The WSSOU is part of the Silver Bow Creek/Butte Area Superfund site (Site) and is located in and near the cities of Butte and Walkerville, Montana. The WSSOU mine study area lies generally to the north and west of the Butte Priority Soils Operbale Unit (BPSOU) and includes other historic mining and metals-impacted areas within the Site not addressed under the BPSOU, the Butte Mine Flooding operable unit (BMFOU), or the Active Mining OU. The WSSOU abuts the BPSOU and Active Mining OU to the east and the Streamside Tailings OU and Rocker Timber Framing and Treating Plant OU to the south. The boundary of the WSSOU is currently undetermined. The WSSOU mine study area encompasses an area of primarily range land, with some amount sparse development (residences). It is bisected by Interstate 15/90. The WSSOU mine study area contains several hundred mine claims are present with smaller disturbances associated with exploration, as well as several larger abandoned mines with substantial surface mine dumps and underground workings. Few investigations have been performed within the WSSOU to determine the risks to human health and the environment. In addition to abandoned mine and mineral exploration areas west of Butte, this RI will include evaluation of upgradient sources of metal contamination to Blacktail Creek. This study area will encompass Blacktail Creek to the east and south of the BPSOU boundary. In addition, stormwater and dust from the Greeley neighborhood southeast of Butte will be assessed as part of the WSSOU RI.

Data from the RI sampling efforts will be used to characterize the potential contamination at the site and evaluate human health and ecological risks. Those risk assessments will provide the most relevant and up to date regulatory information, applicable criteria, and action limits that will be carried forth in the performance of the FS.

WASTE TYPES: ( ) Liquid **(X) Solid** ( ) Sludge ( ) Gas ( ) Unknown ( ) Biological

WASTE CHARACTERISTICS: *Check as many as applicable.*

( ) Corrosive ( ) Flammable ( ) Radioactive
(X) Toxic ( ) Volatile ( ) Reactive
( ) Inert Gas ( ) Unknown
( ) Other:

WORK ZONES:

Work zones related to RI data collection will be the imediate sampling areas within the Mine Study area, Blacktail and Basin Creek watershed area, and Greeley neighborhood (stormwater/dust) as depicted in the *Quality Assurance Project Plan QAPP, WSSOU RI sampling* (WSSOU RI QAPP).

HAZARDS OF CONCERN: *Check as many as applicable.*

(X) Heat Stress CDMS Guideline
(X) Cold Stress CDMS Guideline
(X) Explosive/Flammable
( ) Oxygen Deficient
( ) Radiological
(X) Biological: bees, insects, animals
( ) Other:
( ) Other:
(X) Noise CDMS Guideline
(X) Inorganic Chemicals
( ) Organic Chemicals
(X) Motorized Traffic
(X) Heavy Machinery
(X) Slips & Falls CDMS Guideline

FACILITY'S PAST AND PRESENT DISPOSAL METHODS AND PRACTICES:

There are no current disposal methods of contaminated media for the site.

This plan incorporates CDM Smith's procedure for: *(Click on the relevant topics to download the hazard guideline. Delete irrelevant topics.)*

Housekeeping
Manual Material Handling
Traffic and Work Zone Safety
Excavations
Ladders
Tools and Power Equipment
Working Near or Over Water
Flammable and Combustible Liquids
Hazardous Waste Site Decontamination
Hazardous Waste Site Controls

DESCRIPTION AND FEATURES: *Include principal operations and unusual features (containers, buildings, dikes, power lines, hillslopes, rivers, etc.)*

The project area is located to the west of an active mine site and contains approximately 462 unique mining claims identified through mineral surveys. As part of the mineral survey process, nearly all claims had some level of disturbance through exploration to determine the location and extent of mineral veins and reserves. For the desktop review and scoping of the RI, mineral survey claim maps were obtained from the Bureau of Land Management General Land Office database for the majority of claims in the WSSOU study area. Exploration typically involved at least one discovery shaft, and commonly several additional exploration shafts, crosscuts, drifts, and tunnels with adits, and resultant surficial piles of excavated materials as shown on the mineral survey maps. Commonly, shafts were only sunk as deep as necessary to reach the mineral veins, which may have been relatively near-surface disturbances rather than deeper shafts associated with established underground mines. In some cases, exploration was conducted as long trenches rather than shafts or holes. Exploration activities may have brought heavy-metal containing minerals to the surface that is subject to weathering and erosion, or material may be more near surface overburden with limited metals impacts. Investigation of these claims and features is needed to identify the extent of metals contamination and potential for acid generation, erosion, and connections to surface water drainages. In addition, the widespread presence of shafts and other underground disturbances presents a safety risk to human activity in the area from collapsing ground.

The Blacktail Creek Watershed study area will encompass Blacktail Creek to the east and south of the BPSOU boundary. Long-term monitoring data collected by other entities on Blacktail Creek indicates exceedances of DEQ-7 metals standards mostly only during high flow conditions. The most upgradient station is SS-01 located on the north side of I-90 and just below the confluence with Basin Creek, which has had detected exceedances of DEQ-7 standards. These elevated metals concentrations, such as cadmium, copper, and zinc are assumed to be a result of increased runoff at higher flows that are transporting suspended solids in the stream, although detailed studies have not been conducted upgradient of SS-01.

Stormwater runoff in the Greeley neighborhood, which is located southeast of downtown Butte, may have soils impacted from historic mining activity in Butte, and potentially more recently from wind-blown dust generated from the active Montana Resources mine operation adjacent to the north. Dust containing heavy metals may be depositing on homes and streets, resulting in a runoff containing these metals. Historic deposition of heavy metals in Butte area soils was a result of open-air roasting and smelting facilities, or other unknown sources such as fills from development activities. Discharging stormwater with elevated heavy metals can degrade water quality in Blacktail and/or Upper Silver Bow Creek during precipitation events.

CDM Smith personnel will be tasked with conducting site reconnaissance, solid media sampling at mine dumps identified following site reconnaissance, Bluebird Mine and Mille characterization and Manganese stockpiles investigation, Blacktail Creek and Basin Creek surface water sampling, background soil sampling, and sampling of stormwater and dust in the Greeley neighborhood. Specific site hazards associated with these activities and tasks are listed on page 6 of this SHSP.

SURROUNDING POPULATION: (X) Residential (X) Industrial (X) Commercial (X) Rural (X) Urban OTHER:

HAZARDOUS MATERIAL SUMMARY: ***Highlight or bold waste types and estimate amounts by category.***

CHEMICALS: *Amount/Units:*	**SOLIDS:** *Amount/Units:*	**SLUDGES:** *Amount/Units:*	**SOLVENTS:** *Amount/Units:*	**OILS:** *Amount/Units:*	**OTHER:** *Amount/Units:*
Acids; Hydrochloric, Nitric, Sulfuric	Flyash	Paints	Ketones	Oily Wastes	Laboratory
Pickling Liquors	**Mill or Mine Tailings**	Pigments	Aromatics	**Gasoline**	Pharmaceutical
Caustics: Sodium Hydroxide	Asbestos	Metals Sludges	Hydrocarbons	Diesel Oil	Hospital
Pesticides	Ferrous Smelter	POTW Sludge	Alcohols	Lubricants	Radiological
Dyes or Inks	Non-Ferrous Smelter	Distillation Bottoms	Halogenated (chloro, bromo)	Polynuclear Aromatics	Municipal
Cyanides	**Metals: As, Cd, Cu, Hg, Pb, Zn**	Aluminum	Esters	PCBs	Construction
Phenols	Dioxins		Ethers	Heating Oil	Munitions
Halogens				Propane	
Other - *Anti-Scalants & Coagulants*	Other - *Hydrated Lime/Calcium Hydroxide*	Other - *specify*	Other - *specify*	Other - *specify*	**Other - Acid mine/acid rock drainage waters**

KNOWN CONTAMINANTS	HIGHEST OBSERVED CONCENTRATION	PEL/TLV *ppm or mg/m3 (specify)*	IDLH *ppm or mg/m3 (specify)*	Warning	SYMPTOMS & EFFECTS OF ACUTE EXPOSURE	PHOTO IONIZATION POTENTIAL
Aluminum	35,200 mg/kg	15 mg/m^3	ND	NA	Irritated eyes, skin, respiratory system	NA
Arsenic	1550 mg/kg	0.010 mg/m^3	5 mg/m^3	NA	Nasal ulcers, fever, bronchitis, melanosis, peripheral neuropathy	NA
Cadmium	220 mg/kg	0.005 mg/m^3	9 mg/m^3	NA	Pulmany edema, tight chest, chills	NA
Copper	5780 mg/kg	1 mg/m^3	NE	NA	Nasal perforation, metal taste	NA
Iron	98,000 mg/kg	none	ND	NA	Irritated eyes and skin, abdominal pain, vomiting	NA
Lead	21,900 mg/kg	0.050 mg/m^3	100 mg/m^3	NA	Fatigue, pallor, colic, insomnia	NA
Mercury	197 mg/kg	5 mg/m^3	500 mg/m^3	NA	Parkinsons, asthenia, insomnia, mental confusion, metal fume fever, dry throat, fever, cough, flu-like fever, lower back pain	NA
Silver	132 mg/kg	100 µg/m3	10 mg/m3	Dust	Blue-gray eyes & skin, gastrointestinal irritation	Dust
Zinc	27,300 mg/kg	5 mg/m^3	500 mg/m^3	NA	Sweet metal taste, dry throat, cough, tight	NA

NA = Not Available **NE = None Established** **U = Unknown**

Verify your access to an SDS for each chemical you will use at the site.

S = Soil SW = Surface Water T = Tailings W = Waste TK = Tanks SD = Sediment
A = Air GW = Ground Water SL = Sludge D = Drums L = Lagoons OFF = Off-Site

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SPECIFIC TASK DESCRIPTIONS	**Disturbing the Waste?**	**TASK - SPECIFIC HAZARDS**	**HAZARD & SCHEDULE**
1 Site reconnaissance, Soil/solid media sampling (surface/subsurface) and preparation of soil/solid media samples, Preparation of samples for XRF screening, Dust sampling.	**Intrusive**	Remote areas, potential high flows, wildlife (e.g., insects, snakes, bears), exposure to contaminated materials, breathing soil dust during XRF sample screening, steep slopes, uneven terrain (wide spread ground disturbances, mine dumps, exploration shafts, crosscuts, drifts, tunnels with adits), working near water, difficult driving conditions and use of UTV, heat/cold stress, sun exposure, ladder use (e.g., house gutter sampling), heavy equipment for subsurface sampling (e.g., excavator, direct push technology [DPT] rig).	**Moderate Hazard**
2 Water sampling, including: Surface water, Pore water, Sediment, Stormwater	**Intrusive**	Remote areas, potential high flows, wildlife (e.g., insects, snakes, bears), exposure to contaminated materials, breathing soil dust during XRF sample screening, steep slopes, uneven terrain (wide spread ground disturbances, mine dumps, exploration shafts, crosscuts, drifts, tunnels with adits), working near water, difficult driving conditions and use of UTV, heat/cold stress, sun exposure.	**Moderate Hazard**

SPECIALIZED TRAINING REQUIRED:	**SPECIAL MEDICAL SURVEILLANCE REQUIREMENTS:**
40-Hour OSHA HAZWOPER Training with current refresher **UTV operation task and safety training**	**Current annual HAWOPER medical surveillance, medically fit to wear respirator, fit testing for respirator use**

OVERALL HAZARD EVALUATION: ( ) High **(X) Medium** (X) Low ( ) Unknown *(Where tasks have different hazards, evaluate each.)*

JUSTIFICATION: It is the responsibility of each team member to ensure his or her own safety. Exposure to contaminated water, soil, sludge is a smaller concern, but personnel should take the appropriate steps to limit exposure, (e.g., PPE). Caution should be exercised while operating UTVs and driving on limitedly maintained roads, around machinery, heavy equipment operation, traversing on uneven ground, near steep slopes, and near water. UTV operation shall be limited to established dirt roads/twotracks, unless off road areas have been visibly inspected and known to be free of any hazards (e.g., shafts, deep depressions, mud, ice, etc.)

FIRE/EXPLOSION POTENTIAL: ( ) High ( ) Medium **(X) Low** ( ) Unknown

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PROTECTIVE EQUIPMENT: *Specify by task. Indicate type and/or material, as necessary. Group tasks if possible. Use copies of this sheet if needed.*

BLOCK A

TASKS: **1 - 2**
LEVEL: **D - Modified** ( ) Contingency
(**X**) Primary

Respiratory: (X) Not needed
( ) SCBA, Airline:
( ) APR:
( ) Cartridge:
( ) Escape Mask:
( ) Other:

Head and Eye: ( ) Not needed
(X) Safety Glasses:
( ) Face Shield:
( ) Goggles:
(X) Hard Hat:
( ) Other:

Boots: ( ) Not needed
(X) Steel-Toe ( ) Steel Shank
( ) Rubber **(X) Leather**
( ) Overboots:
(X) water proof boots, knee boots, hip boots, or waiters depending on water conditions/depth during water sampling

Prot. Clothing: ( ) Not needed
( ) Encapsulated Suit:
( ) Splash Suit
( ) Apron:
( ) Tyvek Coverall or
( ) Saranex Coverall
( ) Cloth Coverall:
(X) Hi-Visibility Vest
( ) Other:

Gloves: ( ) Not needed
( ) Undergloves:
(X) Gloves: work gloves
(X) Nitrile gloves: sampling, sample preperation, mining-influenced water
Other: specify below
(X) Tick Spray
(X) Flotation Device (as necessary)
(X) Hearing Protection (around heavy equipment)

(X) Sun Screen

BLOCK B

TASKS: **1 - 2**
LEVEL: **C - Modified** **(X) Contingency**
( ) Primary

Respiratory: ( ) Not needed
( ) SCBA, Airline:
(X) APR: half-face (if dust monitoring indicates need or deamed required by the SSHO)
(X) Cartridge: P100
( ) Escape Mask:
( ) Other:

Head and Eye: ( ) Not needed
(X) Safety Glasses:
( ) Face Shield:
( ) Goggles:
(X) Hard Hat:

Boots: ( ) Not needed
(X) Steel-Toe ( ) Steel Shank
( ) Rubber **(X) Leather**
( ) Overboots: Latex
(X) water proof boots, knee boots, hip boots, or waiters depending on water conditions/depth during water

Prot. Clothing: ( ) Not needed
( ) Encapsulated Suit:
( ) Splash Suit

( ) Apron:
(X) Tyvek Coverall

( ) Cloth Coverall:
(X) Other: Safety Vest

Gloves: ( ) Not needed
( ) Undergloves:
(X) Gloves: work gloves
(X) Nitrile gloves: handling acids, bases, mining-influenced water
Other: specify below
(X) Tick Spray

(X) Flotation Device (as necessary)
(X) Hearing Protection (around heavy equipment)
(X) Sun Screen

BLOCK C

TASKS: **1-2**
LEVEL: ( ) Primary **(X) Contingency**

Respiratory: ( ) Not needed
( ) SCBA, Airline:
( ) APR:
( ) Cartri
( ) Escape
( ) Other:
Head and Eye: ( ) Not needed
( ) Safety Glasses:
( ) Face Shield:
( ) Goggles:
( ) Hard Hat:

Boots: ( ) Not needed
( ) Ste el S
( ) Ru ther
( ) Overboots:

Prot. Clothing: ( ) Not needed
( ) Encapsulated Suit:
( ) Splash Suit

nex Coverall
Coverall:
( ) Other:

Gloves: ( ) Not needed
( ) Undergloves:
( ) Gloves: Nitrile for sampling
( ) Overgloves:

Other: specify below
y
Device If Over Water
( ) Hearing Protection
( ) Sun Screen

BLOCK D

TASKS:
LEVEL: ( ) Primary ( ) Contingency

Respiratory: ( ) Not needed
( ) SCBA, Airline:
( ) APR:
( ) Cartridge:
( ) Escape Mask:
( ) Other:
Head and Eye: ( ) Not needed
( ) Safety Glasses:
( ) Face Shield:
( ) Goggles:
( ) Hard Hat:

Boots: ( ) Not needed
( ) Steel-Toe ( ) Steel Shank
( ) Rubber ( ) Leather
( ) Overboots:

Prot. Clothing: ( ) Not needed
( ) Encapsulated Suit:
( ) Splash Suit

( ) Saranex Coverall
( ) Cloth Coverall:
( ) Other:

Gloves: ( ) Not needed
( ) Undergloves:
( ) Gloves: Nitrile for sampling
( ) Overgloves:

Other: specify below
( ) Tick Spray
( ) Flotation Device If Over Water
( ) Hearing Protection
( ) Sun Screen

Exit Area

This health and safety plan form constitutes hazard analysis per 29 CFR 1910.132

MONITORING EQUIPMENT: *Specify by task. Indicate type as necessary. Attach additional sheets if needed.*

INSTRUMENT	TASK	ACTION GUIDELINES		COMMENTS
Combustible		0-10% LEL	*No explosion hazard*	(X) Not Needed
Gas Indicator	1-2-3-4-5-6-7-8	10-25% LEL	*Potential explosion hazard; notify SHSC*	
		>25% LEL	*Explosion hazard; interrupt task/evacuate*	
		21.0% O2	*Oxygen normal*	
		<21.0% O2	*Oxygen deficient; notify SHSC*	
		<19.5% O2	*Interrupt task/evacuate*	
Radiation		3 x Background:	*Notify HSM*	(X) Not Needed
Survey Meter	1-2-3-4-5-6-7-8	>2mR/hr:	*Establish REZ*	
Photoionization	*Specify:*			(X) Not Needed
Detector				
_____eV Lamp	1-2-3-4-5-6-7-8			
Type ____				
Flame Ionization	*Specify:*			(X) Not Needed
Detector	1-2-3-4-5-6-7-8			
Type_____				
Single Gas	*Specify:*			(X) Not Needed
Type_____	1-2-3-4-5-6-7-8			
Type_____				
Respirable	*Specify:*			(X) Not Needed
Dust Monitor				
Type_____	**1-2**	*Control visible dust emissions or leave site.*		*Under normal conditions, dust monitoring is not required. If site conditions warrant, or at the direction of the Project Manager or H&S Coordinator, dust monitoring may be implemented*
Type_____				
Other	*Specify:*			(X) Not Needed
Type_____	1-2-3-4-5-6-7-8			
Type_____				

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DECONTAMINATION PROCEDURES

ATTACH SITE MAP INDICATING EXCLUSION, DECONTAMINATION, & SUPPORT ZONES AS PAGE TWO

Personnel Decontamination *Summarize below or attach diagram;*	**Sampling Equipment Decontamination** *Summarize below or attach diagram;*	**Heavy Equipment Decontamination** *Summarize below or attach diagram;*
Use wet wipes or wet paper towels to decontaminate equipment, hands and other surfaces as needed to keep clean. Wash hands well before eating or other hand to mouth contact is employed. Avoid tracking mud and dirt into clean zones such as vehicles and field offices, and, to the extent practicable, keep these areas clean. ( ) Not Needed	Soil and water sampling will generally use disposable implements that do not require decontamination. Should sampling require the use of non-disposable implements, decontaminate the equipment as follows: 1) Wash and scrub with potable water, 2) Rinse with potable water, 3) Deionized water rinse, 4) Air dry ( ) Not Needed	Heavy equipment decontamination is the responsibility of the contractor. Generally, all soils, tailings, waste rock, or other mine waste materials should be washed prior to leaving an excavation site or entering public roads. Excavator bucket will be cleaned of debris by brush or pressurized rinse. DPT drilling shoe will be deconned between holes with the methods listed in Sampling Equipment Decontamination section. ( ) Not Needed
Containment and Disposal Method All disposable PPE will be placed in a trash bag and disposed of as non-hazardous trash.	**Containment and Disposal Method** All decon fluids will be spent on the ground at the sampling site.	**Containment and Disposal Method** All decon fluids will be spent on the ground at the excavation site at locations specified by the Engineer.

HAZARDOUS MATERIALS TO BE BROUGHT ONSITE

Preservatives		*Decontamination*		*Calibration*	
( ) Hydrochloric Acid	( ) Zinc Acetate	**(X) Alconox ™**	( ) Hexane	( ) 100 ppm isobutylene	( ) Hydrogen Sulfide
(X) Nitric Acid	( ) Ascorbic Acid	( ) Liquinox ™	( ) Isopropanol	( ) Methane	( ) Carbon Monoxide
(X) Sulfuric Acid	( ) Acetic Acid	( ) Acetone	( ) Nitric Acid	( ) Pentane	**(X) pH Standards**
( ) Sodium Hydroxide	( ) Other:	( ) Methanol	( ) Other:	( ) Hydrogen	( ) Conductivity Std
		( ) Mineral Spirits		( ) Propane	**(X) ORP Standards**

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EMERGENCY CONTACTS	
Water Supply	NA
EPA Release Report #:	800 / 424 - 8802
24 Hr. First Aid/Non-Emergency Medical Services	1-800-350-4511, Press 1
Project Management	CDM Smith Project Manager - Chapin Storrar
	406-441-1477
CHEMTREC Emergency #:	800 / 424 - 9300

SAFETY NARRATIVE: *Summarize below*

If the work team observes hazards for which they have not prepared for, they will withdraw from the area and call the Project Manager. Work will not continue until the hazard has been resolved.

Daily tailgate meetings discussing safety and field activities will be conducted each morning prior to beginning work. Newcomers to the Site will be briefed and required to sign-in on the HASP signature form prior to entering the Site. All operators of UTVs will be task trained on the equipment being used and attend a UTV operator training designated by the H&S coordinator or appropriate SSHO. All operators of UTVs shall review the UTV AHA form prior to operation.

Eliminate dust generation during sample collection and preparation. In case of emergency, call 911.
Amendment for COVID-19 attached to the end of this HASP

HEALTH AND SAFETY PLAN APPROVALS (H&S Mgr must sign each plan)

HSC Signature _____ Date 4/28/2020

HSM Signature _____ Date 4/28/2020

EMERGENCY CONTACTS	NAME	PHONE
Health and Safety Manager	Shawn Oliveira	406 / 293-2672
Site Safety Coordinator	Nic Pisciotta	406 / 441-1425
Client Contact	Nikia Greene	406 / 457-5019
Other *(specify)*		
Environmental Agency	MT DEQ	406 / 444-1460
State Spill Number	Montana	(800) 472 - 2121
Fire Department		911
Police Department		911
State Police		911
Health Department		
Poison Control Center	Nationwide	800 / 222 - 1222
Occupational Physician	Dr. Fred Kohanna	800 / 350 - 4511

For non-emergency medical services:
1. Call AllOne Health at **1.800.350.4511, PRESS 1**, and tell them you are reporting an injury for CDM Smith. Supply requested information.
2. Follow AllOne Health instructions (e.g., first aid, go to clinic, etc.).
3. After care, follow-up with AllOne at the 1-800 #.

MEDICAL EMERGENCY		PHONE
Hospital Name:	St. James Healthcare	406-723-2500
Hospital Address	400 S Clark St, Butte, MT 59701	
Name of Contact at Hospital:	Emergency Room	
Name of 24-Hour Ambulance:	Call 911	
Route to Hospital:	See Turn by turn directions on page 2	

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HEALTH AND SAFETY PLAN SIGNATURE FORM

updated 10/8/18

All site personnel must sign this form indicating receipt of the H&SP. Keep this original on site. It becomes part of the permanent project files. Send a copy to the health and safety manager (HSM).

SITE NAME/NUMBER: West Side Soils Operable Unit

DIVISION/LOCATION: CDM Smith/Helena, MT

CERTIFICATION:

I understand, and agree to comply with, the provisions of the above referenced H&SP for work activities on this project. I agree to report any injuries, illnesses or exposure incidents to the site health and safety coordinator (SHSC). I agree to inform the SHSC about any prescription drugs or over-the-counter medication that may cause impairment that I take within 24 hours of site work.

PRINTED NAME	SIGNATURE	DATE

List of Appendices to this Health and Safety Plan:

A) CDM Smtih Safety Procedures:

Housekeeping
Manual Material Handling
Excavations
Tools and Power Equipment
Working Around Heavy Equipment
Working Near of Over Water
Flamable and Combustible Liquids
Hazardous Waste Site Controls
Hazardous Waste Site Decon
Traffic and Work Zone Safety

Amendment for COVID-19 attached to the end of this HASP

Appendix A
CDM Smith Safety Procedures

Housekeeping
Manual Material Handling
Excavations
Tools and Power Equipment
Working Around Heavy Equipment
Working Near of Over Water
Flamable and Combustible Liquids
Hazardous Waste Site Controls
Hazardous Waste Site Decon
Traffic and Work Zone Safety

16.2 Housekeeping

These guidelines are for the establishment and administration of a clean and orderly work environment at field project sites. A continuous housekeeping program strongly tends to prevent accidents. A clean and orderly work environment can be achieved and maintained through ongoing housekeeping efforts undertaken by personnel at all levels. Project managers shall initiate participation in housekeeping activities and good work habits, not only at the end of a work assignment but throughout the evolution of the project.

- To achieve these benefits, the team shall plan the location of equipment and storage facilities to allow the easy flow of personnel, equipment, materials, fire hazards, and to prevent the obstruction of evacuation, fire fighting, or rescue activities.
- Store materials in a manner that facilitates access of material handling equipment and personnel handling limitations. Lack of sufficient workspace and storage capacity leads to the potential for accidents and decreases efficiency.
- Avoid storage of flammable liquids, such as paints and thinners, unless they are required for specific project needs. If needed, such storage shall be within a metal storage cabinet that has been labeled and approved for the storage of flammable liquids.
- Continuously maintain work areas in a neat and orderly manner.
- Containers should be provided for the collection of waste, trash, and other nonhazardous refuse. Investigation-derived waste and other waste materials that are potentially hazardous should be stored and labeled in accordance with project-specific procedures that meet regulatory and client requirements.
- Deploy leads, hoses, and extension cords so they do not present tripping hazards and are not subject to contact with moisture or physical stress. Where possible, they should be hung overhead with nonconductive material and kept away from walkways, doors, stairs, and ladders.
- Protect protruding rebar and anchor bolts and conspicuously mark them.
- Clean small spills that create slip hazards and/or flammability hazards immediately and do not leave them unattended.
- Keep walkways, aisles, stairways, and passageways in a clear and unobstructed condition.
- Prohibit eating and drinking in work areas where there is potential exposure to toxic or hazardous materials. Smoking is limited to designated smoking areas where there is no such exposure.

16.3 Manual Material Handling

CDM Smith employees should follow the work practices outlined below when lifting and carrying heavy objects.

- Test any load they are required to lift and compare its weight, volume, and shape to their lifting abilities. Employees shall not attempt to lift beyond their capacity.
- Obtain assistance in lifting heavy objects. Back belts or back braces may be used if desired; however, many ergonomists do not believe that these devices create a benefit or provide protection.
- When two or more persons are involved in a manual lift, one person should provide direction of the lift.
- When two or more persons are carrying an object, each employee, if possible, should face the direction in which the object is being carried.
- When two or more persons carry a heavy object that is to be lowered or dropped, there shall be a prearranged signal for releasing the load.
- The right way to lift is easiest and safest. Crouch or squat with the feet close to the object to be lifted, secure good footing, take a firm grip, bend the knees, keep the back vertical, and lift by bending at the knees and using the leg and thigh muscles. Exercise caution when lifting or pulling in an awkward position.
- Employees should avoid twisting or excessive bending when lifting or setting down loads.
- When moving a load horizontally, employees should push the load rather than pull.
- For tasks that require repetitive lifting, the load should be positioned to limit bending and twisting. The use of lift tables, pallets, and mechanical devices should be considered.
- When gripping, grasping, or lifting an object such as a pipe or board, the whole hand and all the fingers should be used. Gripping, grasping, and lifting with just the thumb and index finger should be avoided.

16.8 Excavations

CDM Smith employees who work in or around excavations are exposed to many of the same excavation hazards as construction personnel. CDM Smith employees should learn to recognize these hazards and avoid situations that put themselves, other employees, and subcontractors at risk. Employees should be aware of the following safe excavation work practices.

16.8.1 Pre-Excavation Activities

- Before excavation, the location of any underground utilities such as gas, sewer, electricity, and telephone lines should be determined and marked. In public areas, this can be done using the state's one-call system for utility location. On private property, government facilities, etc., the owner must be asked to locate underground utilities. In some cases, it may be necessary to use nonintrusive subsurface investigation techniques to identify underground utilities and installations.

- Excavations should be conducted under the direction of a "competent person." OSHA defines "competent person" as an individual who, by way of training and/or experience, is knowledgeable of applicable standards, is capable of identifying workplace hazards relating to the specific operation, is designated by the employer, and has authority to take appropriate actions. For excavations, the competent person should be on site and is responsible for ensuring the following:

  - Performing inspections before the start of each shift and as needed throughout the shift to ensure a safe operation
  - Removing employees from the hazardous area when there is evidence of a possible cave-in
  - Identifying and correcting hazards associated with the excavation

- Sometimes the excavation is under control of CDM Smith, and CDM Smith should provide the competent person. Often the excavation is under the control of a contractor, and that contractor should provide the competent person.

- For many excavations an excavation permit must be completed before excavating. The permit is usually generated by the owner/operator of a facility or sometimes a prime contractor. The permit should be completed by the competent person for that excavation.

- Surface encumbrances (buildings, utility poles, pavement, or other structures that may be undermined by the excavation) that have a potential to create a hazard to employees or become subject to physical damage must be removed, supported, or neutralized, as necessary, before the start of any excavation work.

- The competent person must evaluate soil conditions and determine the shoring or sloping requirements for the trench or excavation, based on the soil evaluation. If no attempt is made to determine soil type, excavations shall be sloped at an angle not steeper than 1.5 (horizontal) to 1 (vertical) (34 degrees), or a trench box or other

protective system shall be used. For excavations greater than 20 feet (6 meters) in depth, sloping and/or shoring systems must be designed by a professional engineer.

16.8.2 During Excavation

- The competent person must inspect the trench or excavation daily before performing any work within the trench or excavation deeper than 5 feet.
- For trenches less than 5 feet deep, the competent person must inspect and evaluate the potential for a cave-in.
- All excavations that are 4 feet deep or deeper shall have a ladder for access into the excavation with no more than 25 feet of lateral travel in any direction.
- All excavations that are 5 feet deep or deeper and excavations shallower than 5 feet in unstable soil shall be sloped, braced, or shored to prevent cave-ins.
- No material, including trench spoil, may be stored within 2 feet of the edge of the excavation.
- All excavations shall be barricaded with the appropriate barrier tape and other protective devices to protect against falls or other inadvertent entry.
- If possible, excavations should not be left open. If an excavation must be kept open, proper covers, fencing, and security should be provided to prevent public access to the excavation during nonworking hours.
- Tools, equipment, or heavy machinery should not be placed near an excavation where they may affect the structural stability of the walls or fall into the excavation.
- When mobile equipment is operated adjacent to an excavation, or when such equipment is required to approach the edge of an excavation, and the operator does not have a clear and direct view of the edge of the excavation, a warning system such as barricades, hand or mechanical signals, or stop logs should be used. Where possible, the grade should slope away from the excavation.
- An emergency lighting system should be in place in the event of an electrical failure. This may consist of battery-operated flashlights.
- If employees or small equipment must cross over the excavation, provide walkways or bridges with a minimum clear width of 20 inches, equipped with standard rails, and extending a minimum of 24 inches past each surface edge of the trench.
- For excavation work adjacent to natural waterways, avoid polluting of the water by placing spoil piles away from the water and preventing any accumulation of spoils on slopes.

- Place any environmentally impacted soils on plastic liners and cover the spoil piles to prevent further spreading of the contamination. The liners and covers should be durable enough for the intended period of storage.

- For excavations that may contain a hazardous atmosphere, air monitoring should be conducted before entry and periodically during the work to ensure that a safe atmosphere is maintained during excavation work. Air monitoring shall be performed for explosive/flammable vapors, oxygen, and any hazardous gases that may be present such as hydrogen sulfide, carbon monoxide, or other hazardous gases that may be present as a result of activities conducted in the excavation or contaminants in the soil. Use forced ventilation if needed. Acceptable entry conditions are:

B Oxygen content	20.5 percent to 23.5 percent
B Flammable atmosphere	<10 percent of the lower explosive limit (LEL)
B Hydrogen sulfide	<10 ppm
B Carbon monoxide	<25 ppm
B Toxic vapor/gases	< one half compound exposure limit

Note: If air monitoring results indicate levels outside of the conditions above, CDM Smith employees and subcontractors should not enter the excavation and contact the safety coordinator or HSM for guidance.

- Heavy equipment, tools, or individuals shall not operate/work within 10 feet of any power line or exposed electrical distribution component unless it has been de-energized and visibly grounded or provided with an effective insulating barrier.

- Workers should wear PPE including a hard hat, safety glasses, and safety boots.

- Water accumulation is not permitted in any excavation that will be occupied. Remove standing water using pumps and continuously monitor the water level and pump operation.

- The competent person must evaluate soil conditions and stability as new soil layers are uncovered.

- Do not stand under any live load, including an excavator bucket.

- Stand away from any vehicle being loaded or unloaded to avoid being struck by any spillage or falling materials.

- Do not stand in the swing radius of excavation equipment.

16.12 Tools and Power Equipment

16.12.1 Hand Tools

CDM Smith employees who have a need to use basic hand tools should use the following work practices:

- All tools used on CDM Smith projects, regardless of ownership, shall be of an approved type and maintained in good condition. Tools are subject to inspection at any time. The project manager has the authority and responsibility to condemn unserviceable tools, regardless of ownership.
- Tag defective tools to prevent their use or removal from the job site.
- Use the proper tool for the job performed.
- Do not use hammers with metal handles, screwdrivers, knives with metal continuing through the handle, and metallic measuring tapes on or near energized electrical circuits or equipment.
- Do not throw tools from place to place or from person to person. Tools that must be raised or lowered from one elevation to another shall be placed in tool buckets or firmly attached to hand lines.
- Do not place tools unsecured on elevated places.
- Dress, repair, or replace all impact tools such as chisels, punches, drift pins, etc., that become mushroomed or cracked before further use.
- Use suitable holders or tongs, not the hands, to hold chisels, drills, punches, ground rods, or pipes that are struck by another employee.
- Do not use shims to make a wrench fit.
- Do not use wrenches with sprung or damaged jaws.
- Do not use pipe or other means to extend a wrench handle for added leverage unless the wrench was designed for such use.
- Use tools only for the purposes for which they have been designed.
- Store and handle tools with sharp edges so that they will not cause injury or damage. They shall not be carried in pockets.
- Use eye protection when using or working around impact type tools (e.g., hammer, chisel, ax, hatchet, etc.).
- Replace wooden handles that are loose, cracked, or splintered. The handle shall not be taped, glued, or lashed with wire.

- Keep all cutting tools such as saws, wood chisels, knives, or axes in suitable guards or in special compartments.
- When using such tools as screwdrivers and wrenches, avoid using your wrists in a bent, flexed, extended, or twisted position for long periods of time. Employees should maintain their wrists in a neutral or straight position.
- Do not leave tools lying around where they may cause a person to trip or stumble.
- When working on or above open grating, use a canvas or other suitable covering to cover the grating to prevent tools or parts from dropping to a lower level where others are present, or barricade or guard the danger area.
- Do not depend on the insulation on hand tools to protect users from shock.

16.12.2 Electric Tools

CDM Smith employees who have a need to use electric power tools should use the following work practices:

- The non-current carrying metal parts of portable electric tools such as drills, saws, and grinders shall be effectively grounded when connected to a power source unless the tool is an approved double-insulated type or the tool is connected to the power supply by means of an isolating transformer or other isolated power supply, such as a 24-volt DC system.
- All power tools shall be examined before use to ensure general serviceability and the presence of all applicable safety devices. The electric cord and components shall be given a thorough examination for cracks, exposed wires, or other defects.
- Power tools shall be used only within their capability and shall be operated in accordance with the manufacturers' instructions.
- The use of eye protection is required when using or working around power tools.
- Operators should take care to use appropriate hand positions on cutting tools such as saws, drills, or grinders to avoid hand injury.
- All tools shall be kept in good repair and disconnected from the power source while repairs are being made.
- Electrical tools shall not be used where there is a hazard of flammable vapors, gases, or dusts until that hazard is firmly under control.
- GFCI should be used with all electric power tools.
- All guards and safety interlocks with which the tools were purchased shall be in place and in working order.

- Any tool that is identified as defective should be tagged "not for use," and set aside for repair and/or discarded.
- Do not wear loose or frayed clothing while operating power tools and equipment. Hair should not stick out from hard hats.
- Do not use electrical cords to transport, suspend, hoist, or lower tools.
- Do not allow power cords to lie in water.
- Disconnect rotating tools from the power source before adjusting, servicing, or cleaning them. Follow the lockout procedure described in Section 16.5.
- Do not modify tools.

16.12.3 Pneumatic Tools

CDM Smith employees that use pneumatic power tools should use the following work practices:

- Compressed air and compressed air tools shall be used with caution.
- Pneumatic tools shall never be pointed at another person.
- Pneumatic hose connections should be secured by some positive means to prevent them from becoming accidentally disconnected. Chicago fittings have wire holes to allow such security.
- Pneumatic power tools shall be secured to the hose by some positive means to prevent the tool from becoming accidentally disconnected.
- Safety clips or retainers shall be securely installed and maintained on pneumatic impact tools to prevent attachments from being accidentally expelled.
- Compressed air shall not be used for cleaning purposes except when reduced to less than 30 psi and then only with effective chip guarding and PPE.
- Compressed air shall not be used to blow dust or dirt from clothing (or skin).
- The manufacturer's safe operating pressure for hoses, pipes, valves, filters, and other fittings shall not be exceeded.
- The use of hoses for hoisting or lowering tools shall not be permitted.
- All compressed air hoses exceeding 30 psi shall have a safety device at the source of supply or branch line to reduce pressure in case of hose failure or disengagement of a connection.

- Before making adjustments or changing air tools, the air shall be shut off at the air supply valve ahead of the hose. The hose shall be bled at the tool before breaking the connection. Disconnection at the quick-change connectors is one way to meet this goal.
- Eye protection is required when using or working around pneumatic tools.
- Use hearing protection if noise exposure is a concern (i.e., if it is too loud to conduct a normal conversation).
- Pneumatic tools shall be operated only by persons trained in their use.
- A pneumatic tool used where it may contact exposed live electrical parts shall have a nonconductive hose and an accumulator to collect moisture.
- Employees shall not use any part of their bodies to locate or attempt to stop an air leak.
- All guards and safety interlocks must be in place and functional.

16.12.4 Engine-Powered Tools

CDM Smith employees that use engine-powered tools should use the following work practices:

- Stop the engine and allow it to cool before refueling, servicing, or maintenance.
- Use care in refueling. Clean up any small spills of fuel or oil immediately.
- The use of eye protection is required when using or working around engine-powered tools.
- Use hearing protection if noise exposure is a concern (i.e., if it is too loud to conduct a normal conversation).
- If possible, disconnect the spark plug before performing an adjustment, maintenance, or service.
- Use tools in well ventilated areas to eliminate any accumulation of fumes.
- Do not use tools in a flammable or explosive atmosphere.
- Equip engines with spark-arresting mufflers.
- Avoid contact with hot engine components.
- All guards and safety interlocks should be in place and functional.

16.15 Working Around Heavy Equipment

Good work practices while working around heavy equipment include:

- Assume the operator cannot see you. The operator's vision may be blocked by blind spots. He or she is frequently concentrating on their work and equipment and may not notice a site visitor.
- If you must approach the operator, be sure you have made eye contact with the operator and they know you will be approaching them before approaching the equipment. Verbal contact, direct or by radio, is even better. Do not approach if the equipment is moving or in operation.
- Stay clear of pinch points and swing areas of equipment. At CDM Smith projects, these areas should be taped or barricaded off; however, when equipment moves frequently, you cannot count on other organizations to mark these zones.
- Do not walk near a moving piece of equipment. It could turn or rotate any minute. Modern construction equipment moves fast and in any direction.
- On a noisy site, you may not notice the equipment's back-up alarm. Keep aware of what is happening around you.
- Never walk under a load on a crane or hoist. Indeed, avoid the area under the hook or bucket.
- Do not cut across the path of equipment backing up.
- Wear your hardhat and safety glasses. The safety glasses protect your eyes from dust and debris and the hardhat provides protection for your head and makes you more visible on the site.
- On sites where there is frequent vehicle or construction equipment movement, wear high-visibility clothing.
- Maintain a clearance of at least 10 feet between any part of the machine or its load and any electrical line or apparatus carrying up to 50,000 volts. One foot of additional clearance is required for every additional 30,000 volts.

16.16 Working Near or Over Water

When working on, over, or near water, basic water safety precautions must be taken. Such areas include riverbanks, channels, dock areas, working from vessels of any kind, aeration basins, or other areas where a danger of drowning may exist. Depending on the circumstances, precautions needed may include any or all of the following:

- Employees should wear Coast Guard-approved personal floatation devices (PFDs) (either vests or jackets) where a potential danger of drowning exists. PFDs are required when working from any type of boat or floating platform.
- The PFDs should be inspected before and at the end of each use for wear, torn stitching or straps, inoperable buckles, or other defects.
- Ring buoys with at least 90 feet of line shall be provided and readily available for emergency rescue operations. Distance between ring buoys shall not exceed 200 feet.
- At least one lifesaving skiff shall be immediately available at locations where employees are working over or adjacent to water, unless the width of the water body is small enough to allow any potential rescue to occur from the bank (as would be the case with most aeration basins).

In some circumstances, these precautions may also be required by OSHA regulations. If you are planning to conduct work where water hazards may be present, be sure to take all appropriate precautions. If you will work in this situation, you should review the full text of the OSHA standard, OSHA Standard for Work Over or Near Water and consult your division HSM or designated HSC.

16.17 Flammable and Combustible Liquids

Work with flammable or combustible liquids exposes the employees to fire, explosion, and toxicity hazards. They should implement the following controls.

16.17.1 Storage and Handling

- Only approved containers and portable tanks should be used for the storage and handling of flammable and combustible liquids.
  - Approved safety cans shall be used for the handling and use of flammable liquids in quantities greater than 1 gallon.
  - For quantities of 1 gallon or less, only the original container or approved safety cans shall be used for storage, use, and handling of flammable/combustible liquids.
  - The requirements for shipping these liquids exceeds those described here. If flammable or combustible liquids must be shipped, the individual offering the material for shipment must have completed DOT Hazardous Material Training. Contact your HSM for information on DOT training.
- Flammable or combustible liquids shall not be stored near exits, stairways, or pathways that people normally use for safe passage.
- No more than 25 gallons of flammable/combustible liquids shall be stored in a room outside of a storage cabinet or tank approved for the purpose.
- Quantities of flammable and combustible liquids in excess of 25 gallons shall be stored in an acceptable or approved cabinet meeting the requirements of 29 CFR 1926.152(b)(2)(i).
- Cabinets shall be labeled in conspicuous lettering, "Flammable - Keep Fire Away."
- Not more than 60 gallons of flammable or 120 gallons of combustible liquids shall be stored in any one storage cabinet. Not more than three cabinets may be located in a single storage area.

16.17.2 Outdoor Storage

- For storage of flammable and combustible liquids outdoors, containers (not more than 60 gallons each) shall not exceed 1,100 gallons in any one pile or area. Five feet of clearance shall separate piles or groups of containers. These containers shall remain at least 20 feet from any other building or structure.
- Within 200 feet of each pile of containers, there shall be a 12-foot wide access way to permit approach of fire control apparatus.

- The storage area shall be graded in a manner to divert possible spills away from buildings or other exposures, or shall be surrounded by a curb or earth dike at least 12 inches high. Provisions shall be made for the controlled draining of accumulations of groundwater or rainwater, or spills of flammable or combustible liquids when curbs or dikes are used.

- At least one portable fire extinguisher, having a rating of not less than 20 pounds, shall be located not less than 25 feet or more than 75 feet from any flammable or combustible liquid storage area located outdoors.

- Precautions shall be taken to prevent the ignition of flammable/combustible vapors. Sources of ignition include, but are not limited to: open flames; lightning; smoking; cutting and welding; hot surfaces; frictional heat; static, electrical, and mechanical sparks; spontaneous ignition, including heat-producing chemical reactions; and radiant heat.

16.17.3 Dispensing Flammable and Combustible Liquids

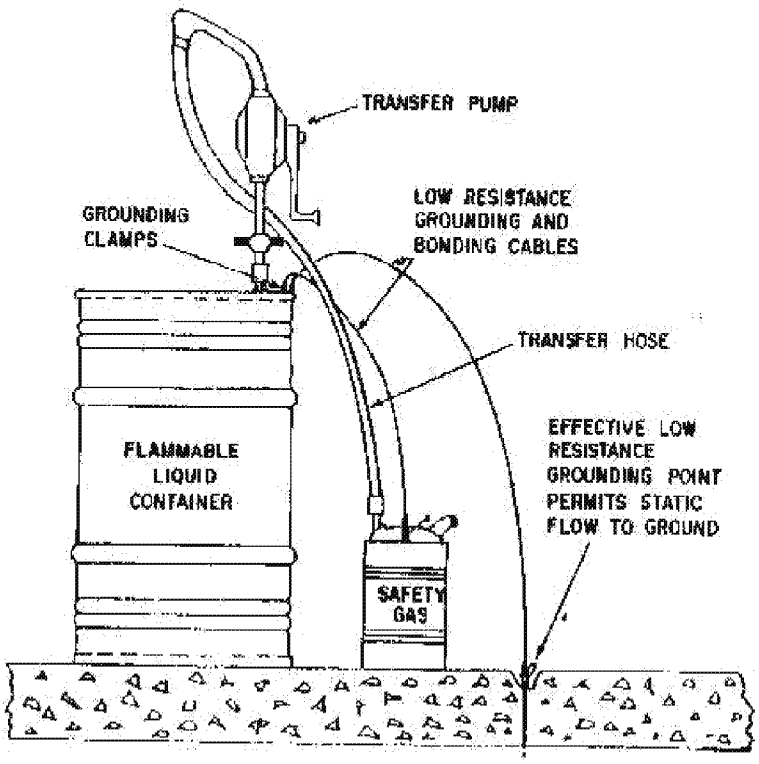
- Areas where flammable or combustible liquids are dispensed at one time, in quantities greater than 5 gallons from one tank or container to another tank or container, shall be separated from other operations by a distance of 25 feet or by construction having a fire resistance of at least 1 hour. Adequate natural or mechanical ventilation shall be provided to maintain the concentration of flammable/combustible vapor at or below 10 percent of the LEL.

- Static electricity is generated by the contact and separation of dissimilar material, such as when fluid flows through a pipe or from an orifice into a tank. If the accumulation of static charge is sufficient, a static spark may occur. Transfer of flammable/combustible liquids from one container to another should be done only when containers are electrically bonded and grounded to prevent such accumulation of static charge (Figure 16-3).

- The management of flammable and combustible liquids is much more complicated than is indicated by the length of this section, which reviews only those issues appropriate to the incidental use of these materials.

- Storage and handling of the mobile and combustible liquids should comply with the requirements of National Fire Code No. 30 (see http://www.nfpa.org/Codes/NFPA_Codes_and_Standards/List_of_NFPA_documents/NFPA_30.asp - you will need a password from the CDM Smith Infocenter).

Figure 16-1
Typical Grounding System



16.20 Hazardous Waste Site Controls

Work sites designated as hazardous waste sites must control access to the work area to only authorized personnel and conform to general work practices expected at hazardous waste site operations as required by the OSHA Standard for Hazardous Waste Operations, 29 CFR 1910.120. The following concepts should be reflected in the HSP for the project.

16.20.1 Access Control

Controlled access to hazardous waste site work areas is required to protect personnel working on the site as well as to limit the potential for transporting contaminants off site. Depending on the size of the work site, hazards and contaminants present, and complexity of the work, access control may range from verbally cautioning nonauthorized personnel to stay away from the work area, to a program including site security, signs, or formal sign-in and sign-out procedures. Details of site-specific access control procedures should be included in the site-specific HSP. Some general work practices for access control are noted below:

For small-scale site investigations that are short-term projects (i.e., days, not weeks or months), identify a work area to the work crew and keep persons not associated with the job site out of the work area. If the site is in an area where nonauthorized persons are likely to be encountered, traffic cones, caution tape, and signs identifying the area as a controlled access area may be used.

For more extensive projects where work may be done for weeks or longer, the team should deploy more extensive access controls. They should:

- Set up physical barriers and hire security personnel to prevent nonauthorized persons from entering the work site.
- Keep the number of personnel and equipment on site to the minimum required to do the project effectively and safely.
- Establish work zones within the site (Section 16.20.2).
- Establish controlled access points to be used by authorized personnel.
- Track the entry and exit of personnel through a check-in, checkout system.
- Establish a formal decontamination corridor from exclusion zones.

16.20.2 Work Zones

Field project managers working under HSPs for hazardous waste operations are required to establish work zones to prevent or reduce the spread of site contaminants to noncontaminated areas on or off site. Movement between zones should be restricted to those that need access to a specific area, and entry and exit between zones should be through designated access control points. A description of the three work-zone system for hazardous wastes is provided below.

Exclusion Zone – The exclusion zone should include any area where contamination is known or suspected. Areas of air, water, or soil that are contaminated with hazardous materials (biohazards, radioactive materials, chemicals) should be included in the exclusion zone. The zone should be well known to site workers. On smaller projects, this can be a verbal identification to site workers, such as "a 20-foot radius around the drill rig." On larger projects, or in areas that may be encountered by observers or the general public, the zone may need to be defined with caution tape, traffic cones, or in some instances, fencing and barriers. The need will be site-specific and the specific method should be identified in the site-specific HSP. Some work practices that should be followed in the exclusion zone include:

- Employees in the exclusion zone must wear the PPE designated in the site HSP for tasks executed within the zone.
- No eating, drinking, chewing gum or tobacco, smoking, application of cosmetics, including application of lip balm, sunscreen, or insect repellant is allowed in the exclusion zone.
- Sitting or kneeling in areas of high concentrations of contaminants should be avoided.
- If any PPE becomes defective, the employee should leave the work area via the designated egress area, decontaminate as needed, and replace the defective PPE before returning to work in the exclusion zone.
- Prescription drugs should not be used within the exclusion zone unless approved by CDM Smith's medical consultant. The use of illegal drugs or consumption of alcohol is prohibited.
- When leaving the exclusion zone, employees should exit via the designated access/ egress point(s) and follow decontamination procedures described in the site HSP.

Contaminant Reduction Zone – A contaminant reduction zone (CRZ) is established to provide a transition between the exclusion zone and the support zone. The CRZ is set up at the access control points of the exclusion zone and will vary in size depending on the complexity of activities that need to occur within the zone. For small site investigations, the CRZ may simply be a designated area near containers set up to collect used disposable PPE and some soap and water. For larger projects, the CRZ may include specific decontamination points and be staffed by personnel specifically designated to participate in the decontamination of personnel and equipment exiting the exclusion zone. Depending on the site contaminants, level of contamination, and decontamination procedures, personnel in the CRZ may be required to wear protective clothing, gloves, or respirators. The specific requirements will be outlined in the site HSP. The CRZ should be placed in an area that is not contaminated at the boundary of the exclusion zone.

Support Zone – The support zone is established near the entrance to the site and is far enough from the exclusion zone and CRZ that specialized protective clothing or respirators are not used. The use of normal field PPE such as hard hats, safety glasses,

and safety work boots is expected except for areas such as office trailers, break and lunch areas, or other areas designated as having no known or anticipated hazards. Operational support activities and equipment storage and maintenance areas are located in the support zone. No equipment or personnel should go from the exclusion zone to the support zone without passing through the CRZ and being decontaminated in accordance with the site HSP.

Mobile Work Zone – For those projects that involve brief periods of work in multiple locations, a specific area may be designated as the exclusion zone for the duration of the work performed in that area. The exclusion zone can be terminated (provided there are no ongoing hazards or potential exposures to contaminants) and moved to the next area of work. For example, during soil borings or well installation, the exclusion zone can be defined as, "1.5 times the mast height" of the drill rig. Once the boring has been closed, or well installed and secured, and all drill cuttings have been secured, the area can be opened up and a new exclusion zone established around the next boring location.

16.20.3 Considerations when Establishing Work Zones

Work zones should be large enough to perform tasks within the zone safely, with no exposure to hazards to personnel outside the zone, but they should also be small enough to be able to secure and control access. Some considerations in establishing work zones include:

- Physical and topographical features of the site
- Dimensions of the contaminated area
- Weather
- Physical, chemical, and toxicological characteristics of contaminants and chemicals used in the zone
- Potential for exposure to site contaminants
- Known and estimated concentrations of contaminants
- Air dispersion of contaminants
- Fire and explosion potential
- Planned operations and space needed to perform the work safely
- Surrounding areas
- Decontamination procedures
- History of job site

16.20.4 General Hazardous Waste Site Work Practices

- **Buddy System** - Work should be scheduled so that no person works unobserved within the exclusion zone at any time. Each worker within the exclusion zone should maintain visual contact with at least one other worker on the site. All site personnel should remain aware of each other and monitor each other's condition.

- **Eating, drinking, chewing gum or tobacco, and smoking** are prohibited within the contaminant reduction and exclusion zones. (**Exception for heat stress:** Squirt bottles of water, Gatorade, or other fluids may be consumed via squirt bottles in the contaminant reduction zone with the approval of the HSM. Open bottles, cups, etc. should not be permitted.)

- Sitting or kneeling should be avoided in areas of known or suspected areas of contamination.
- Hands and face should be thoroughly washed when leaving the work area.
- Defective PPE should be repaired or replaced immediately.

Sections 5, 6, 7, 9, and 11 of this manual are particularly applicable to H&S at hazardous waste sites.

16.21 Decontamination at Hazardous Waste Sites

Proper decontamination helps protect employees and prevents the contamination of uncontaminated areas. Decontamination protects all site personnel by minimizing the transfer of harmful materials into clean areas. It helps prevent mixing of incompatible chemicals and protects the community by preventing uncontrolled transportation of contaminants from the site.

16.21.1 Prevention of Contamination

To prevent contamination, crew members should:

- Follow procedures for proper dressing before entry into the exclusion zone. Proper dressing will minimize the potential for contaminants to bypass the PPE and escape decontamination.
- Protect monitoring and sampling instruments by bagging. Make openings in the bags for sample ports and sensors that must contact site materials, or cover equipment and tools with a strippable coating, which can be removed during decontamination.
- Encase any source of contaminants on the site with barriers (e.g., plastic sheeting or over packs).
- Stress work practices that minimize contact with hazardous substances. Use remote sampling, handling, and container-opening techniques.

16.21.2 Decontamination Equipment Selection

In selecting decontamination equipment, consider whether the equipment must be decontaminated for reuse or can be easily disposed. Recommended equipment for decontamination includes:

- Storage tanks or appropriate treatment systems
- Drains or pumps
- Long-handled brushes
- Wash solutions appropriate for the contaminants present
- Rinse solutions appropriate for the contaminants present
- Pressurized sprayers for washing and rinsing
- Curtains, enclosures, or spray booths
- Long-handled rods and shovels
- Containers to hold contaminants and contaminated soils
- Wash and rinse buckets
- Brooms
- Containers for the storage and disposal of contaminated material

16.21.3 Decontamination Design

Decontamination facilities should be located in the CRZ, i.e., the area between the exclusion zone (the contaminated area) and the support zone (the clean area), and described in the site HSP.

- Site-specific factors that affect the decontamination facility design must be considered. Typical factors include:
  - The chemical, physical, and toxicological properties of the wastes
  - The pathogenicity of infectious wastes
  - The amount, location, and containment of contaminants
  - The potential for and location of exposure based on assigned worker duties, activities, and functions
  - The potential for wastes to permeate, degrade, or penetrate materials used for personal protective clothing and equipment, vehicles, tools, buildings, and structures
  - The proximity of incompatible wastes
  - The movement of personnel and/or equipment among different zones
  - The emergencies that may arise
  - The methods available for protecting workers during decontamination
  - The impact of the decontamination process and compounds on worker H&S
- Decontamination Line
  - Decontamination should be an organized process by which levels of contamination are reduced.
  - The decontamination process consists of a series of steps performed in a specific sequence. For example, outer, more heavily contaminated items are decontaminated first, followed by the decontamination and removal of inner, less contaminated items.
  - Each step should be performed at separate stations to prevent cross contamination.
  - Decontamination stations should allow enough separation to prevent cross contamination and should be arranged in order of decreasing contamination.
  - Separate decontamination areas should be provided to isolate workers from different contamination zones containing incompatible wastes or decontamination processes.
  - Entry and exit points should be conspicuously marked. Preferably the entry to the CRZ from the exclusion zone should be separate from the entry to the exclusion zone from the CRZ.
  - Dress-out stations for entry to the CRZ should be separate from redressing areas for exit from the CRZ.
  - Personnel who wish to enter clean areas of the decontamination facility, such as locker rooms, must be appropriately decontaminated first.
  - Examples of decontamination lines and procedures for personnel wearing various levels of protection are provided in Exhibits 16A and B.

16.21.4 PPE for Decontamination Workers

A rule of thumb is that decontamination workers wear a level of protection one level below the level of protection worn in the exclusion zone. However, consideration should be given to the following when determining the level of protection for a given project.

- The nature of site contamination
- Degree of contamination expected on workers leaving the exclusion zone
- The results of wipe tests and onsite air monitoring

Some site-specific cases may require that decontamination personnel wear the same level of PPE as workers in the exclusion zone. Cases include:

- Workers using a steam jet may need a different type of respiratory protection than other decontamination personnel because of the high moisture content of the steam jets.

- Cleaning solutions used and wastes removed during decontamination may generate harmful vapors, requiring a different type of respiratory or clothing protection.

16.21.5 Decontamination Methods

All personnel, clothing, equipment, and samples leaving the contaminated area of a site should be decontaminated to remove any harmful chemicals, radioactive material, or infectious organisms that may have adhered to them. The extent of decontamination will vary depending on the nature of site activity, site contamination, and other factors.

- Decontamination methods available include:

    - Physical removal
    - Chemical detoxification or disinfections/sterilization
    - A combination of both physical and chemical methods

- The selected decontamination method should be reviewed for any safety and health hazards. If the selected method poses a direct health hazard, measures shall be taken to protect both the decontamination personnel and the workers to be decontaminated.

- Physical Removal

    - Physical methods using high pressure and/or heat should be used with caution.
    - Loose contaminants can be removed by using a soap and water rinse with a soft bristle brush to remove dust and vapors that cling to equipment and workers, or that are trapped in small openings, such as clothing or fabric weaving.

- Adhering contaminants can be removed by:

    - Scraping, brushing, and wiping.
    - Solidifying.
    - Freezing (using dry ice or ice water).
    - Adsorption or absorption (e.g., kitty litter or powdered lime).
    - Melting.

- Volatile liquid contaminants can be removed from PPE or equipment by evaporation followed by a water rinse. Evaporation may be expedited by the use of steam jets.

- Chemical Removal

  - Decontamination using chemicals should only be done if recommended by an industrial hygienist or other qualified professional.
  - Any chemical used in the decontamination process must be chemically compatible with the equipment or clothing being decontaminated.
  - Halogenated solvents should only be used for decontamination in extreme cases where other cleaning agents will not remove the contaminant.

- Chemical removal types include the following:

  - Surface contaminants can be dissolved in a solvent.
  - Solidification of liquid or gel contaminants can enhance their physical removal. Typical solidification processes are moisture removal using adsorbents such as grounded clay or powdered lime; and chemical reactions using polymerization chemicals and/or chemical reagents.

16.21.6 Personnel Decontamination

Different levels of personnel protection, as discussed in the PPE guidelines, may be used at any given site. The following is a description of the decontamination process for each level of protection.

- **Level D**

  - An area should be designated for the gross removal of dirt and mud from gloves and boot covers. Paper towels and buckets of rinse water can be made available for this purpose.
  - Typical decontamination steps for Level D operations are provided in Exhibit 16-B.
  - Soap and water should be used to wash hands and face before leaving the site.
  - Laundering of personal clothing should be completed as soon as possible once offsite.

- **Level C and B**

  - A decontamination line should be established.
  - Site-specific procedures should be outlined in the site HSP. The recommended procedure for this layout is listed in Exhibit 16-C.

- **Level A** - It is not anticipated CDM Smith will directly participate in Level A operations. If required, site-specific procedures will be developed in coordination with the division HSM.

16.21.7 Sampling and Monitoring Equipment Decontamination

Sampling equipment often becomes grossly contaminated. Often trowels or drum thieves (coliwassas) are dedicated to a particular site. These should be left in the exclusion zone and disposed of as contaminated waste at the end of site work. Sampling equipment such as split spoons or other equipment that is used to collect several samples must be cleaned and decontaminated between samples to prevent cross contamination. These items should be cleaned and decontaminated in accordance with the project operations or sampling

plan. Dirt and wash solutions from sampling equipment decontamination should be collected and disposed of as investigation-derived waste.

Once grossly contaminated, testing and monitoring instrumentation can be difficult to decontaminate without causing damage to the instrument. Care should be taken in the field to prevent gross contamination of field instruments by avoiding direct contact between the instrument and contaminated soils, water, or surfaces. In some cases it may be necessary to place instruments in plastic bags, leaving small openings for sampling ports, detectors, and exhaust ports. The plastic bags can then be removed as the instrument comes out of the exclusion zone. The outside of instruments can be wiped down with paper towels or brushed off with clean soft brushes.

16.21.8 Heavy Equipment Decontamination

Drill rigs, trucks, backhoes, and other heavy equipment can be difficult to decontaminate. The method generally used is to wash them with water under pressure and scrub accessible areas with soap and warm water. Hot water and steam systems can be effective but may increase air concentrations of contaminants, exposing decontamination workers. Particular care should be taken where equipment comes into direct contact with contaminated soils such as tires, buckets, or treads. In severe cases, tires may need to be replaced or parts sand blasted clean or disposed of. Equipment should be visually inspected to be sure it is free of any visible signs of contamination. In some cases, wipe tests or other methods may be needed to confirm equipment has been adequately decontaminated before leaving the site.

16.21.9 Decontamination Solutions, Disposable PPE, and Site Wastes

Potentially contaminated equipment, disposable PPE, respirator cartridges, disposable sampling equipment, brushes, buckets, waste decontamination solutions, etc. should be secured in drums and labeled. Disposal methods for these materials may depend on client requirements and/or results of site investigation data. The confirmed presence of hazardous materials on the site may require disposal of investigation-derived wastes as hazardous wastes.

Care should be taken during work and decontamination activities to minimize waste materials generated.

Exhibit 16-B
Minimum Measures For Level D Decontamination

Station 1 - Equipment Drop	Deposit equipment used on plastic drop cloths. Segregation at the drop reduces the probability of cross contamination. During hot weather, a cool down station may be set up in this area.
Station 2 - Outer Garment, Boots, and Gloves Wash and Rinse	Scrub outer boots, outer gloves, and suit with decontamination solution or detergent/water. Rinse off using copious amounts of water.
Station 3 - Hard Hat, Outer Boot, and Glove Removal	Remove hard hat, outer boots, and gloves.
Station 4 - Boots, Gloves, and Outer Garment Removal	Remove boots, suit, and inner gloves and deposit in separate containers lined with plastic.
Station 5 - Field Wash	Wash hands and face.

Exhibit 16-C
Minimum Measures For Level B, And C Decontamination

Station 1 - Equipment Drop	Deposit equipment used on plastic drop cloths. Segregation at the drop reduces the probability of cross contamination. During hot weather, a cool down station may be set up in this area.
Station 2 - Outer Garment, Hard Hat, Boots, and Gloves Wash and Rinse	Scrub outer boots, hard hat, outer gloves, and suit with decontamination solution or detergent/water. Rinse off using copious amounts of water.
Station 3 - Tank/Air Canister Change	If a worker leaves the exclusion zone to change an air tank, air canister, or mask, this is the last step in the decontamination procedure. Worker's air tank is exchanged, new outer gloves and boots donned, and joints tapped. Worker returns to duty.
Station 4 - Outer Boots, and Glove Removal	Remove outer boots and gloves. Deposit in container with plastic liner.
Station 5 - SCBA/Respirator Removal	SCBA backpack and facepiece/respirator is removed (avoid touching face with fingers). SCBA or respirator is deposited on plastic sheets.
Station 6 - Inner Gloves and Outer Garment Removal	Remove suit and inner gloves and deposit in separate containers lined with plastic.
Station 7 - Field Wash	Shower if highly toxic, skin-corrosive, or skin-absorbable materials are known or suspected to be present. Wash hands and face.

16.22 Traffic and Work Zone Safety

These guidelines apply whenever CDM Smith employees or subcontractors work in areas exposed to vehicular traffic on public streets or highways.

- Where vehicular traffic hazards exist because of work at locations near public streets or roads, a system of traffic and work zone controls should be developed to mitigate the hazard. The system should meet the requirements of Part 6 of the Manual of Uniform Traffic Control Devices (MUTCD) published by the Federal Highway Administration, or the applicable state version of the MUTCD.

- In general, when the MUTCD allows the use of traffic safety direction devices, such as cones, CDM Smith will supplement those direction devices with a physical barrier, such as a truck.

- All traffic control systems on public roads must be coordinated with local traffic control officials as required by applicable law.

- Periodically evaluate effectiveness of temporary traffic control setups by walking or riding the job area looking for evidence of poor controls and near misses such as swerving traffic, motorists braking quickly, skid marks, blind spots, etc.

- Give motorists plenty of advanced warning of upcoming work zones.

- All employees working within designated work zones or near vehicular traffic should wear high-visibility clothing such as orange, yellow, or yellow-green shirts, jackets, or vests. During wet or inclement weather, similarly colored rainwear should be worn.

- During night work, between the hours of sunset and sunrise, high-visibility clothing should incorporate reflective striping or fabric and be visible at a distance of 1,000 feet. This clothing should meet ANSI standard #107 for High Visibility Safety Apparel.

- All employees working near traffic and vehicles must maintain situational awareness at all times. Stay mindful that warning signs and cones inform drivers to take action but that some drivers may not pay attention, and vehicles may still enter the work zone.

Health and Safety Plan COVID-19 Amendment

The following requirements and guidance has been developed for multiple EPA Region VIII superfund projects being conducted by CDM Smith, it's employees, and subcontractors. These requirements and guidance is supplemented by CDM Smith's ***COVID-19 Prevention Guidance for Field Activities***, attached to this amendment. Should conditions warrant or additional guidance is provided, this amendment will be updated. Employees and subcontractors should check with their project manager for any waiver, under special circumstances from the listed requirements, prior to deviating from them.

- All meetings (e.g., planning, tailgate H&S, trainings) will be conducted to maintain social distancing and a minimum distance of 6 feet from each individual or be attended remotely (e.g., Skype, Microsoft Teams, phone).

- All transportation to and from the site and for field activities, including equipment use (e.g., bobcat, UTV) will be conducted with single person operation and no passengers (i.e., one person per vehicle). Employees and subcontractors should check with their project manager for any waiver from this requirement prior to deviating from it.

- All equipment (vehicle, hand tools, power tools, heavy equipment) will be dedicated to each employee and will not be shared without appropriately disinfecting all surfaces, which another employee could reasonably come into contact with, utilizing the guidance as described in ***COVID-19 Prevention Guidance for Field Activities*** prior to use by another employee.

- All workspaces (e.g., desks, measurement equipment, valves) and areas of facilities which another employee could reasonably come into contact with (e.g., railings, containers, treatment tanks), shall be disinfected at the end of each workday, utilizing the guidance as described in ***COVID-19 Prevention Guidance for Field Activities***.

- All field activities (e.g., sampling, sample management, excavation, WTP operations) will be conducted while keeping a minimum 6 feet distance between other personnel.

- All employees using common areas (e.g., portable restrooms, break rooms) will utilize dedicated wash stations following using the common areas and follow "best practices" as described in ***COVID-19 Prevention Guidance for Field Activities***.

- Employees should make notice of wind directions when communicating with team members and position themselves to prevent aerosolized droplets of bodily fluids from coming into contact with them.

- Post attached Occupational Safety and Health Administration and Center for Disease Control posters at sites as applicable.

- The following **COVID-19 Prevention Guidance for Field Activities** will be supplemented by subsequent guidance should it become available.

****

COVID-19 Prevention Guidance for Field Activities

Per Tim Wall's memorandum on 3/16/20, Working Safely during the Coronavirus (COVID-19) Outbreak Update, we have new firm-wide policies for how to best respond to this outbreak, establish continuity of operations, and protect personnel.

This document is intended to provide basic guidance to field and project teams that have operations outside of a CDM Smith office other than CCI construction sites. Included are measures on how to best protect employees and minimize potential exposure to COVID-19.

Planning

All projects involving field work should have an H&S plan to address specific hazards associated with that project. Since potential exposure to this virus is a new hazard, those H&S plans will need to be modified at the project level to address their specific COVID-19 exposures. These modifications will need to be communicated to personnel ASAP. The practices below must be evaluated and included in any greater planning activities and project-specific H&S plans. For non-routine exposure scenarios contact your H&S Manager for assistance in working out appropriate precautions.

COVID-19 Practices to Minimize Exposure

COVID-19 exposure is most directly associated with close contact with an infected individual. There are also less direct means of contact that are not as fully understood such as contact with contaminated surfaces, droplets, and residues. To minimize exposure, it is imperative that field staff exercise the precautions below

When not to report for Site Work

- Have you had exposure to or contact with someone diagnosed with COVID-19? Close contact means having been within 6 feet of that person for an extended time or being exposed to their cough or sneeze.
- You have a fever, a cough, difficulty breathing or have lost your sense of taste or smell.
- Has a Public Health Official informed you that you were potentially exposed to COVID-19?
- Do you share a household with a public health professional who might have been exposed?

What to do if you or someone gets sick while on site:

- If you become ill while on travel or at work, you should self-isolate in your hotel room and contact Allone Health to determine if you should visit a medical facility or local medical provider. From there, notify your supervisor, team lead, or HR representative of your symptoms and any recommendations from Allone Health. For COVID-19 like symptoms, most medical providers are requesting that you call first before seeking treatment.
- In general, an employee that is sick can return to the site once their healthcare provider has cleared them to return for duty. If they test positive for COVID-19, typically they would need to test negative two consecutive times before being allowed to return to work.

Best Practices

- Maintain social distancing. Stay a minimum of 5-6 feet away from other people. **This is the most important action to limit exposure.**
- Minimize contact with others. Do not shake hands (use non-contact greetings).
- Increase the frequency of hand washing, for a minimum of 20 seconds. Use hand sanitizer as you can.
- The voluntary use of loose-fitting masks or bandanas are encouraged to minimize face touching and distribution of droplets and aerosols from individuals. CDM Smith is attempting to procure these, however staff are encouraged to obtain on their own or make them themselves. See https://www.ecommunity.com/giveppe/homemade-mask-instructions or https://www.youtube.com/watch?v=j8aYEBtUQ9E&feature=youtu.be
    - Please note that use of a face mask is not adequate protection alone, physical distancing, hand washing, and disinfection of common surfaces needs to be incorporated into your daily activities and the loose-fitting face masks should not be used where the use of N95 or ½ respirators have been approved.
- No sharing of PPE without first disinfecting the equipment.
- Do not use common coffee pots or water coolers. Bring your own and use individual water bottles.
- Minimize time in shared office spaces, trailers etc. Maximize physical distancing.

- Avoid touching your face, in particular your mouth, eyes, and nose.
- Regularly disinfect common surfaces, several times per day if possible. If not available, the surface can be cleaned with soap and water or a diluted solution of bleach (https://www.cdc.gov/coronavirus/2019-ncov/prevent-getting-sick/disinfecting-your-home.html)
- Plan work and meetings to minimize the density of people in one area.
- Organize virtual meetings as opposed to in-person meetings where possible.
- At the beginning of your work day, discuss with any CDM Smith or Client team members the precautions that are to be taken to minimize exposure.
- Disinfectants to consider (https://www.epa.gov/pesticide-registration/list-n-disinfectants-use-against-sars-cov-2)or alternative disinfectants as follows:
    - isopropyl alcohol (aka isopropanol aka IPA) min. 70%-recommended sit time 5 minutes,
    - household hydrogen peroxide, min. 3% (Note: opened/expired H_2O_2 will likely be less than 3%, start with unopened/unexpired bottle) – recommended sit time 2 minutes (test as it may bleach fabrics),
    - quaternary ammonium, recommended sit time 5-10 minutes dependent on the mixture. (via spray bottle) *,
    - 10% bleach (1 part 5% household bleach to 9 parts water); recommended sit time up to 10 minutes depending on the label (spray bottle) *
    - Use of a ½-1 gallon pump sprayer will allow for quick and efficient disinfection of common surfaces onsite, in vehicles, and in hotel rooms.

The physical distancing, personal hygiene, and use of protective equipment guidance above are the most effective means to minimize exposures to COVID-19.

The equipment center has a limited inventory of N95 masks for activities that present potential airborne hazards that cannot be mitigated through social distancing. The equipment center also has a limited inventory of nitrile protective gloves for hazards that involve frequent contact with potentially contaminated surfaces. However, frequent handwashing, wiping of common surfaces, and the social distancing/personal hygiene actions described are considered sufficient protection in most cases.

CDC COVID-19 Posters

CPM Smith

CORONAVIRUS DISEASE 2019
(COVID-19)

Patients with COVID-19 have reportedly had mild to severe respiratory illness. Symptoms* can include

- Fever
- Cough
- Shortness of breath

***Symptoms may appear 2-14 days after exposure.**

Seek medical advice if you develop symptoms, and have been in close contact with a person known to have COVID-19 or if you live in or have recently been in an area with ongoing spread of COVID-19.

cdc.gov/COVID19-symptoms

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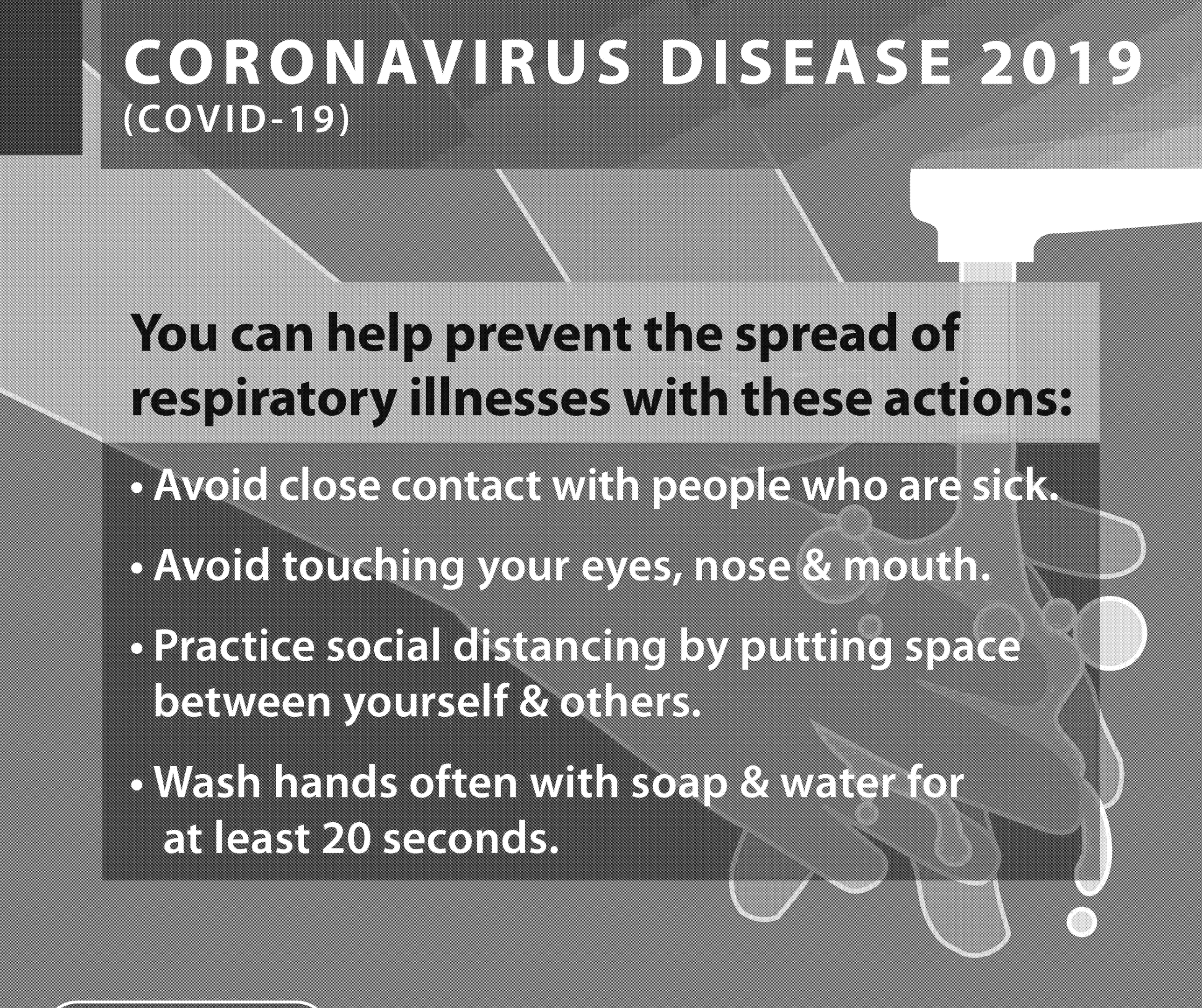
CORONAVIRUS DISEASE 2019
(COVID-19)



You can help prevent the spread of respiratory illnesses with these actions:

- Avoid close contact with people who are sick.
- Avoid touching your eyes, nose & mouth.
- Practice social distancing by putting space between yourself & others.
- Wash hands often with soap & water for at least 20 seconds.

DEPARTMENT OF HEALTH & HUMAN SERVICES · USA

CDC

cdc.gov/coronavirus

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STOP THE SPREAD OF GERMS

Help prevent the spread of respiratory diseases like COVID-19.

Avoid close contact with people who are sick.

DEPARTMENT OF HEALTH & HUMAN SERVICES · USA

CDC

cdc.gov/COVID19

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STOP THE SPREAD OF GERMS

Help prevent the spread of respiratory diseases like COVID-19.

Cover your cough or sneeze with a tissue, then throw the tissue in the trash.

DEPARTMENT OF HEALTH & HUMAN SERVICES · USA

CDC

cdc.gov/COVID19

CS316038A March 17, 2020 2:06 PM

STOP THE SPREAD OF GERMS

Help prevent the spread of respiratory diseases like COVID-19.

Clean and disinfect frequently touched objects and surfaces.

cdc.gov/COVID19

STOP THE SPREAD OF GERMS

Help prevent the spread of respiratory diseases like COVID-19.

Stay home when you are sick, except to get medical care.

cdc.gov/COVID19

CS316038A March 17, 2020 2:06 PM

STOP THE SPREAD OF GERMS

Help prevent the spread of respiratory diseases like COVID-19.

Avoid touching your eyes, nose, and mouth.

DEPARTMENT OF HEALTH & HUMAN SERVICES · USA

CDC

cdc.gov/COVID19

CS316038A March 17, 2020 2:06 PM

STOP THE SPREAD OF GERMS

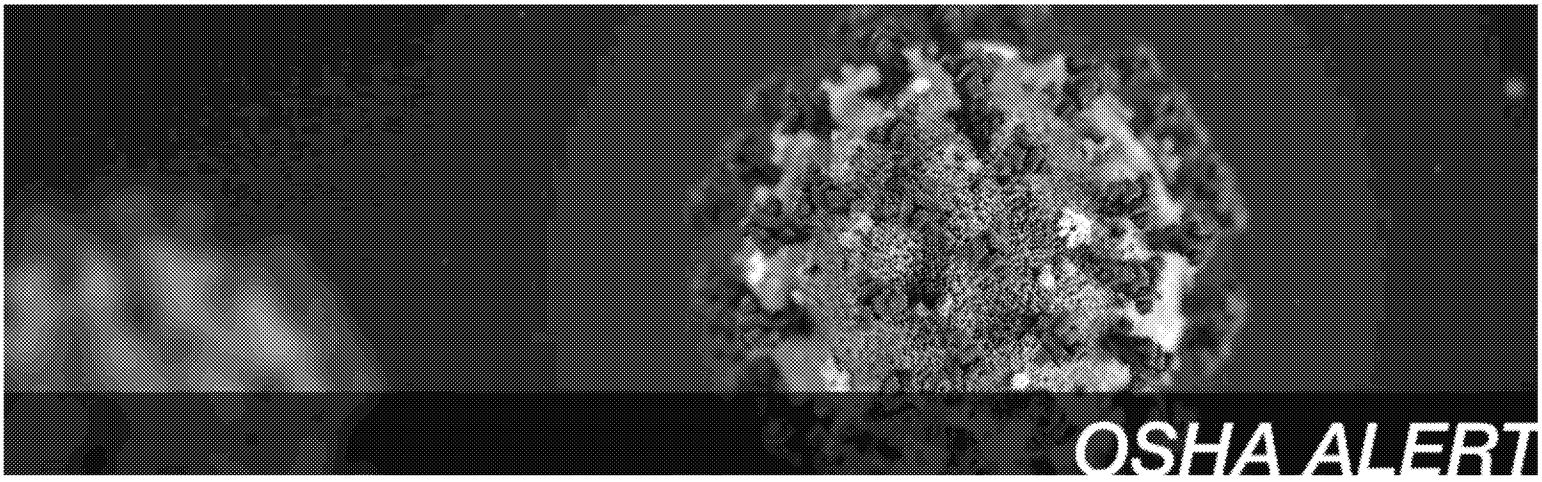
Help prevent the spread of respiratory diseases like COVID-19.

Wash your hands often with soap and water for at least 20 seconds.

cdc.gov/COVID19

(5)160360 March 17 2020 2:00 PM

OSHA COVID-19 Alerts



Prevent Worker Exposure to Coronavirus (COVID-19)

The novel coronavirus (officially called COVID-19) is believed to spread from person-to-person, primarily through respiratory droplets produced when an infected person coughs or sneezes. The virus is also believed to spread by people touching a surface or object and then touching one's mouth, nose, or possibly the eyes.

Employers and workers should follow these general practices to help prevent exposure to coronavirus:

- Frequently wash your hands with soap and water for at least 20 seconds.
- If soap and running water are not available, use an alcohol-based hand rub that contains at least 60% alcohol.
- Avoid touching your eyes, nose, or mouth with unwashed hands.
- Avoid close contact with people who are sick.

Employers of workers with potential occupational exposures to coronavirus should follow these practices:

- Assess the hazards to which workers may be exposed.
- Evaluate the risk of exposure.
- Select, implement, and ensure workers use controls to prevent exposure, including physical barriers to control the spread of the virus; social distancing; and appropriate personal protective equipment, hygiene, and cleaning supplies.

For the latest information on the symptoms, prevention, and treatment of coronavirus, visit the Centers for Disease Control and Prevention coronavirus webpage.

For interim guidance and other resources on protecting workers from coronavirus, visit OSHA's COVID-19 webpage.

OSHA issues alerts to draw attention to worker safety and health issues and solutions.

Worker Exposure Risk to COVID-19

Classifying Worker Exposure to SARS-CoV-2

Worker risk of occupational exposure to SARS-CoV-2, the virus that causes COVID-19, during an outbreak may depend in part on the industry type and need for contact within 6 feet of people known to have, or suspected of having, COVID-19.

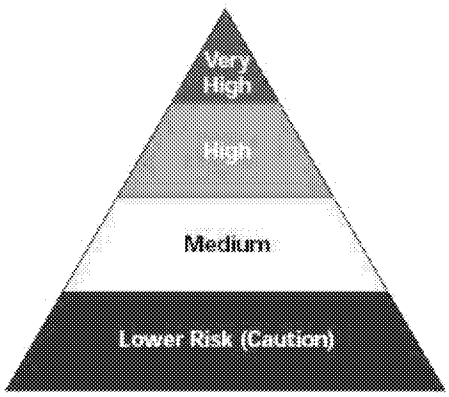
OSHA has divided job tasks into four risk exposure levels, as shown below. Most American workers will likely fall in the lower exposure risk (caution) or medium exposure risk levels.

Occupational Risk Pyramid for COVID-19

VERY HIGH EXPOSURE RISK

Jobs with a high potential for exposure to known or suspected sources of COVID-19 during specific medical, postmortem, or laboratory procedures. Workers include:

- Healthcare and morgue workers performing aerosol-generating procedures on or collecting/handling specimens from potentially infectious patients or bodies of people known to have, or suspected of having, COVID-19 at the time of death.



The four exposure risk levels represent probable distribution of risk.

HIGH EXPOSURE RISK

Jobs with a high potential for exposure to known or suspected sources of COVID-19. Workers in this category include:

- Healthcare delivery, healthcare support, medical transport, and mortuary workers exposed to known or suspected COVID-19 patients or bodies of people known to have, or suspected of having, COVID-19 at the time of death.

MEDIUM EXPOSURE RISK

Jobs that require frequent/close contact with people who may be infected, but who are not known or suspected patients. Workers in this category include:

- Those who may have contact with the general public (e.g., schools, high-population-density work environments, some high-volume retail settings), including individuals returning from locations with widespread COVID-19 transmission.

LOWER EXPOSURE RISK (CAUTION)

Jobs that do not require contact with people known to be, or suspected of being, infected.

- Workers in this category have minimal occupational contact with the public and other coworkers.

For more information, see the *Guidance on Preparing Workplaces for COVID-19*.

News Release

U.S. Department of Labor | April 6, 2020

U.S. Department of Labor Publishes New OSHA Poster Aimed At Reducing Workplace Exposure to the Coronavirus

WASHINGTON, DC – The U.S. Department of Labor's Occupational Safety and Health Administration (OSHA) has issued a new poster listing steps all workplaces can take to reduce the risk of exposure to coronavirus.

The poster highlights 10 infection prevention measures every employer can implement to protect workers' safety and health during the coronavirus pandemic. Safety measures include encouraging sick workers to stay home; establishing flexible worksites and staggered work shifts; discouraging workers from using other workers' phones, desks and other work equipment; and using Environmental Protection Agency-approved cleaning chemicals with label claims against the coronavirus.

The new poster is available for download in English, or Spanish.

Visit OSHA's Publications webpage for other useful workplace safety information.

The release is the latest effort by OSHA to educate and protect America's workers and employers during the coronavirus pandemic. In response to President Trump's action to increase the availability of general use respirators, OSHA has issued a series of guidances that expand access to respirators in the workplace. OSHA has also published Preparing Workplaces for COVID-19, a guidance aimed at helping workers and employers learn about ways to protect themselves and their workplaces during the ongoing pandemic.

Visit OSHA's coronavirus webpage frequently for updates. For further information about coronavirus, please visit the U.S. Department of Health and Human Services' Centers for Disease Control and Prevention.

Under the Occupational Safety and Health Act of 1970, employers are responsible for providing safe and healthful workplaces for their employees. OSHA's role is to help ensure these conditions for America's working men and women by setting and enforcing standards, and providing training, education and assistance. For more information, visit www.osha.gov.

The mission of the Department of Labor is to foster, promote and develop the welfare of the wage earners, job seekers and retirees of the United States; improve working conditions; advance opportunities for profitable employment; and assure work-related benefits and rights.

# # #

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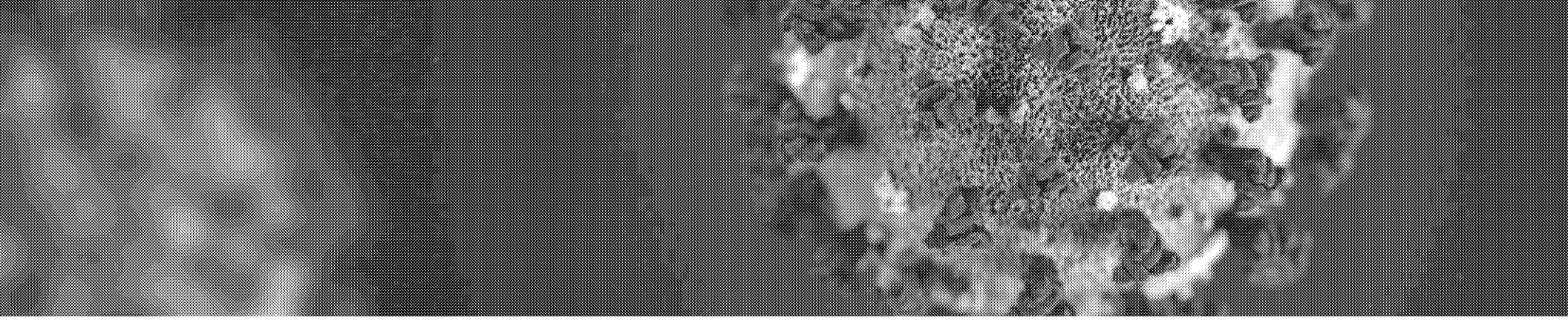
Release Number: 20-581-NAT



Ten Steps All Workplaces Can Take to Reduce Risk of Exposure to Coronavirus

All workplaces can take the following infection prevention measures to protect workers:

1. Encourage workers to stay home if sick.
2. Encourage respiratory etiquette, including covering coughs and sneezes.
3. Provide a place to wash hands or alcohol-based hand rubs containing at least 60% alcohol.
4. Limit worksite access to only essential workers, if possible.
5. Establish flexible worksites (e.g., telecommuting) and flexible work hours (e.g., staggered shifts), if feasible.
6. Discourage workers from using other workers' phones, desks, or other work tools and equipment.
7. Regularly clean and disinfect surfaces, equipment, and other elements of the work environment.
8. Use Environmental Protection Agency (EPA)-approved cleaning chemicals with label claims against the coronavirus.
9. Follow the manufacturer's instructions for use of all cleaning and disinfection products.
10. Encourage workers to report any safety and health concerns.

For more information, visit www.osha.gov/coronavirus or call 1-800-321-OSHA (6742).

OSHA® Occupational Safety and Health Administration
www.osha.gov
1-800-321-OSHA (6742)
TTY 1-877-889-5627
OSHA 3990-03 2020